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*Postscript:*

While the above was in proof, I received from M. A. Traylor and D. E. Willard a list of specimens taken by Fuertes and Osgood in Ethiopia, now in the collection of the Field Museum of Natural History, Chicago. Included are 4 *Francolinus barwoodi*, apparently all adults, from the Muger River valley at 1515-1757 m on 12 February 1927. The catalogue numbers for the 3 males and one female are 68985, 68986, 75363 and 75364 respectively. From the account of the expedition the collecting site must have been at 9°28'N, 38°36'E, which is 67 km southwest of the Jemmu site and 87 km southeast of the Kalo Ford. The distribution of certainly identified specimens now extends for 150 km from west to east and for 108 km from north to south.

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## Description, moult and measurements of *Montifringilla theresae*

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Probably due to its remarkably circumscribed range (Vaurie 1959, Vasic 1974), knowledge of Theresa's Snow Finch *Montifringilla theresae* is incomplete and based on only a few casual records (Meinertzhagen 1937, Paludan 1959, Dementiev 1963, Niethammer 1967). Therefore it seems worth recording observations of this species made during the Oxford University Ornithological Expedition to Afghanistan and Kashmir 1970, although these also are fragmentary.

During late July we encountered small flocks of Theresa's Snow Finches in undulating and arid country between the Nil Kotal and Band-i-Amir in central Afghanistan. They were particularly common in the valley at Band-i-Amir (67° 12' N, 34° 50' E) usually feeding in parties on the lower scree slopes below cliffs flanking the valley. Although Common Snow Finches *Montifringilla nivalis* also occurred here, the two species only occasionally formed mixed flocks, and *M. nivalis* was more usually encountered in rockier habitat.

Between 4 and 12 August 1970 we mist-netted 41 Theresa's Snow Finches by a small stream flowing into the Band-i-Amir lakes, where they came to drink and bathe, along with many Common Snow Finches, Crimson-winged Finches *Rhodopechys sanguinea*, Desert Finches *Rhodopechys obsoleta* and Horned larks *Eremophila alpestris*. All Theresa's Snow Finches were weighed to the nearest gram on a Pesola balance, measured and details of plumage and moult noted before being ringed (with rings supplied by the Bombay Natural History Society) and released. Three of these were subsequently recaptured during the same 8-day period.

Whilst our sample undoubtedly contained adult males, females and birds of the year, without an adequate reference description to guide us we were unable to age and sex each bird caught. The details noted enabled some birds to be sexed, however, by comparison with details of birds sexed later by dissection. Weights and wing lengths (Fig. 1) are compared with published figures. A wide range of weights is apparent, our's being mostly lower than those of birds caught in Turcomania during the winter (Dementiev 1963), but many also are less than those of breeding Theresa's Snow Finches from the Unai pass in Afghanistan (Niethammer 1967). Wing lengths are also diverse, but appear to correlate with sexual difference, males being the larger, confirmed by differences in colouration of plumage and soft parts.

A full description was taken of the first Theresa's Snow Finch that we caught, and is recorded here as previous descriptions are incomplete and appear to be based on dead specimens (Meinertzhagen 1937, Dementiev & Gladkov 1954, Dementiev 1963):—

Wing 88 mm. Weight 22 gm. Bill from skull 15 mm, from feather edge 12 mm. Nostril width 6 mm. Tarsus 19.5 mm. Wing formula: Wing point=3rd primary; 2nd,  $\frac{1}{2}$  mm less; 4th, 4 mm less; 5th, 11 mm less, remainder in moult. First primary minute, much shorter than coverts. Tail: 3rd, 4th and 5th retrices longest (numbered centrifugally), outermost (6th) 4.5 mm less, central (1st) 4.5 mm less, 2nd, 2 mm less.

Upper mandible grey-brown horn, slightly yellower on ridge. Lower mandible yellow, brownish-blue horn at tip. Iris brown. Legs and feet blackish. Crown, nape, mantle and upper back buff. Scapulars with blackish-brown mark on lower half of outer webs. Upper tail coverts buff-grey.

Primaries blackish-grey. 2nd, 3rd and 4th primaries with faint white outer margin, most noticeable on 2nd; also faint white mottling on inner web below primary coverts. 5th to 10th primaries with white outer margin and white mark on inner web below primary coverts. Primary coverts and alula blackish with brownish margins. Secondary coverts buff-brown with buff-white margins. Tertiaries blackish-brown with buff-white margins. Inner web of median coverts off-white with buff margin, outer web brown with buff margin. Lesser coverts grey with buff margins. 12 retrices, mainly blackish-grey. Outer retrices with white outer margin, black shaft and the inner web with large white patch at tip. Penultimate retrices white, streaked grey on outer margin and a black spot at tip with white margin.

Judging by its wing length this bird was a female. Its bill colour, grey upper and yellow lower mandibles, is also characteristic of the bill colour of females of other species of *Montifringilla*.

Whilst descriptions were not taken of the other Theresa's Snow Finches caught, some characteristics of a few birds were noted. Thus, two birds were noted as possessing the "black mask" characteristic of adult males of this species, two had the iris brick-red and several were recorded as having an all dark grey bill, rather than the "two-toned" bill of the bird described above (see Fig. 1). Birds with all dark grey bills and those with "two-toned" bills occupy opposite halves of the range of wing length recorded, corresponding

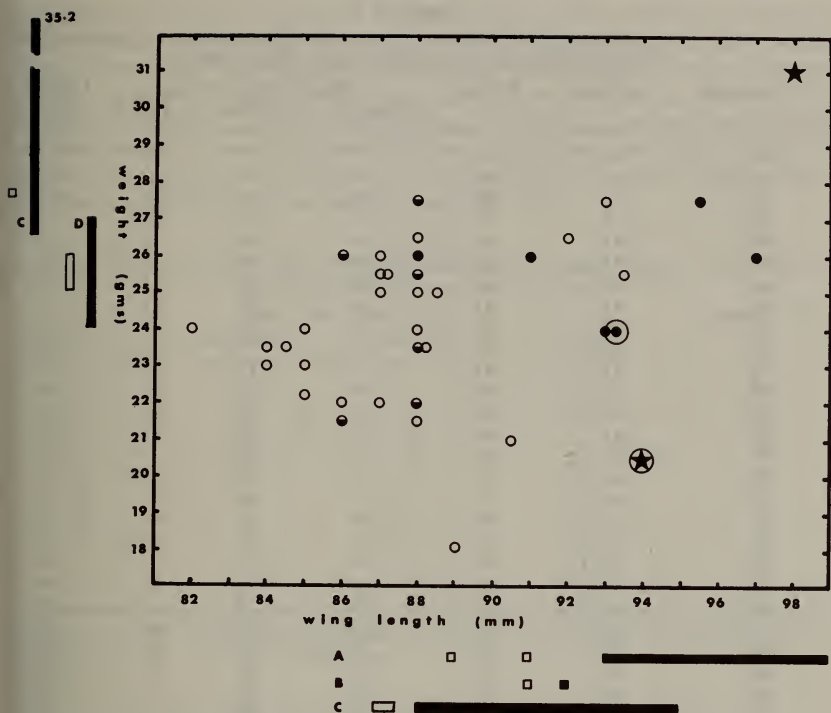


Figure 1. Weights and wing-lengths of *Montifringilla theresae* caught at Band-i-Amir, Afghanistan, compared with published data.

Band-i-Amir data: solid symbols ● = birds with all dark grey bill; half-shaded symbols ◐ = birds with grey upper mandible and yellow lower mandible; open symbols ○ = bill colour not noted. Stars ★ = birds with 'black mask'; Large circles ○ = birds with brick red iris.

Published data: solid symbols ■ = males; open symbols □ = females.

Sources: A, Meinertzhagen 1937; wing length of 5 males and 2 females

B, Dementiev & Gladkov 1954; wing length of 1 male and 1 female

C, Dementiev 1963; wing length of 8 males and 2 females, weight of 7 males and 1 female

D, Niethammer 1967; weight of 7 males and 4 females

closely to previously recorded ranges of wing length of males and females respectively. Birds having a "black mask" and those with a brick-red iris also fit the male wing length range. Thus an all dark grey bill and a brick-red iris appear to be male characteristics, apparently previously undescribed for this species, but possibly confined to adult birds. However, one of us (CSW) possesses a colour slide of a bird in female or juvenile plumage which appears to have a brick-red iris, so this characteristic may prove unreliable for sexing.

Birds which were evidently adult males also showed more white on the wing, both on remiges and median coverts, especially in flight. In females and juveniles the white was dull and appeared dirty in comparison.

TABLE 1

Measurements (mm), weights (gm) and moult scores of Theresa's Snow Finches *Montifringilla theresae* caught at Band-i-Amir, Afghanistan.

| Wing length       | Weight | Primary | Moult scores (as a %) <sup>†</sup> |         |      | Contour moult* |
|-------------------|--------|---------|------------------------------------|---------|------|----------------|
|                   |        |         | Secondary                          | Tertial | Tail |                |
| 88 <sup>1</sup>   | 22     | —       | —                                  | —       | —    | —              |
| 87·5 <sup>2</sup> | —      | 44      | 0                                  | 27      | 0    | x              |
| 90·5 <sup>3</sup> | 21     | 40      | 0                                  | —       | —    | —              |
| 89 <sup>4</sup>   | 18     | 26      | 0                                  | 0       | 0    | 0              |
| 88·5 <sup>5</sup> | 25     | 34      | 0                                  | 47      | 0    | 0              |
| 87                | 25·5   | 34      | 0                                  | 0       | 0    | x              |
| 84                | 23·5   | 42      | 0                                  | 13      | 13   | x              |
| 84                | 23     | 42      | 3                                  | 27      | 13   | x              |
| 87                | 26     | 42      | 0                                  | 0       | 7    | 0              |
| 87                | 25·5   | 48      | 0                                  | 0       | 10   | 0              |
| 87                | 25     | 42      | 0                                  | 27      | 17   | x              |
| 88                | 26     | 36      | 0                                  | 47      | —    | —              |
| 88                | 26·5   | 40      | 0                                  | 47      | 10   | —              |
| 88                | 25     | 40      | 0                                  | 40      | 13   | xx             |
| 87                | 22     | 46      | 0                                  | 40      | 7    | xx             |
| 88                | 24     | —       | —                                  | —       | —    | —              |
| 95·5              | 27·5   | 56      | 7                                  | 40      | —    | x              |
| 93                | 24     | 66      | 7                                  | 47      | 50   | 0              |
| 88                | 23·5   | 18      | 3                                  | 0       | 0    | 0              |
| 88                | 25·5   | 46      | 0                                  | 0       | —    | x              |
| 91                | 26     | 48      | 3                                  | 27      | 30   | x              |
| 86                | 21·5   | 6       | 0                                  | 0       | 0    | 0              |
| 97                | 26     | 48      | 10                                 | 67      | 47   | x              |
| 94                | 25·5   | 54      | 7                                  | 27      | 37   | xx             |
| 94                | 20·5   | 58      | 13                                 | 60      | 32   | xx             |
| 93                | 24     | 50      | 0                                  | 13      | 33   | —              |
| 85                | 24     | 34      | 3                                  | 20      | 0    | x              |
| 82                | 24     | 46      | 0                                  | 33      | 17   | xx             |
| 86                | 26     | 40      | 3                                  | 27      | —    | xx             |
| 88                | 27·5   | 42      | 20                                 | 33      | 10   | xx             |
| 90                | 27     | 48      | 27                                 | 40      | 23   | xx             |
| 85                | 22     | 30      | 0                                  | 47      | 0    | x              |
| 98                | 31     | 58      | 17                                 | 53      | 43   | xx             |
| —                 | 19·5   | 18      | 0                                  | 0       | 0    | —              |
| 88                | 21·5   | 22      | 0                                  | 0       | 0    | —              |
| 85                | 23     | 32      | 0                                  | 27      | —    | —              |
| 84·5              | 23·5   | 38      | 0                                  | 20      | 13   | —              |
| 86                | 22     | 36      | 0                                  | —       | 3    | xx             |
| 88                | 23·5   | 24      | 0                                  | 0       | 0    | x              |
| 93                | 27·5   | —       | —                                  | —       | —    | —              |
| 92                | 26·5   | 58      | 17                                 | 60      | 53   | x              |

Notes. \*Contour moult: 0=feathers all old; x=moult starting; xx=heavy moult; — indicates data not available.

†Moult of remiges and retrices was recorded according to the method recommended by the British Trust for Ornithology (Snow 1967), but scores are here presented as a percentage of maximum possible score (=completed moult).

<sup>1</sup>Bill 15, tarsus 19·5, tail 48 mm.

<sup>2</sup>Bill 16, tarsus 20·5, tail 44 mm.

<sup>3</sup>Bill 15·5, tarsus 19·5, tail 48·5 mm.

<sup>4</sup>Bill 18, tarsus 20·00, tail 47 mm.

<sup>5</sup>Bill 16 mm.

Almost all the Theresa's Snow Finches were in active wing, tail and body moult. Moult scores for each of these three groups of feathers are given in Table 1. Whilst the restricted duration of our observations can provide no

information on length of moult in this species, other details are apparent. The sequence of moult appears to be normal for a passerine. Primary moult occurs first, with secondary, tertial and tail moult starting when primary moult is 30%–40% completed. Both adult and first year birds appear to undergo a complete moult in the autumn, as in the Common Snow Finch, and the timing of moult of both Theresa's and Common Snow Finches at this locality appears to coincide almost exactly (Table 2), indicating the same response to closely similar ecological requirements.

TABLE 2

Moult scores of Common Snow Finches *Montifringilla nivalis* caught at Band-i-Amir, Afghanistan. (Conventions as in Table 1.)

| Primary | Moult scores (as a %) |         | Tail | Contour moult |
|---------|-----------------------|---------|------|---------------|
|         | Secondary             | Tertial |      |               |
| 56      | 0                     | 0       | 37   | —             |
| 50      | 3                     | 27      | 10   | —             |
| 42      | 0                     | 13      | 0    | xx            |
| 68      | 13                    | 73      | 73   | x             |
| 46      | 0                     | 47      | 10   | 0             |
| 76      | 13                    | 87      | 73   | x             |
| 56      | 7                     | 53      | 30   | x             |
| 36      | 0                     | 40      | 10   | x             |
| 54      | 3                     | 53      | 10   | —             |
| 54      | 7                     | 40      | 43   | xx            |

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## Notes on the biology and systematics of Polynesian swiftlets, *Aerodramus*

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Swiftlets of the genus *Aerodramus* (formerly placed in *Collocalia*, but see Brooke 1972, Medway & Pye 1977) are widespread in the tropical Pacific Ocean from Australia and New Guinea east to the Cook, Society and